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Date of Deposit: October 3, 2005

Attorney Docket No. 23681-014 UTIL

List of Claims:

1. (Original) A method of growing a crystal on a substrate disposed in a reactor

that provides a reactor chamber in which the substrate is disposed, the method comprising:

flowing reactive gases inside the reactor chamber toward the substrate, the reactive gases comprising components that are able to bond to each other to form the crystal;

heating a buffer gas; and

flowing the heated buffer gas in the reactor chamber between the reactive gases and a wall of the reactor such that the reactive gases and the buffer gas can interact;

wherein the flowing buffer gas inhibits at least one of a first material at least one of in and produced by the reactive gases from reaching the reactor wall and a second material produced by the reactor wall from reaching the reactive gases in the reactor chamber before the reactive gases reach the substrate.

- 2. (Currently Amended) The method of claim 1 further comprising using the buffer gas to heat the reactive gases sufficiently to react to form a desired material needed for crystal growth before reaching the substrate, the desired material for forming a desired crystal on the substrate.
- 3. (Original) The method of claim 1 further comprising expelling unused portions of the reactive gases and the buffer gas from the chamber, wherein the buffer gas flows at a speed such that substantially none of the first material reaches the reactor wall and substantially none of the second material reaches the reactive gases inside the reactor chamber.
- 4. (Original) The method of claim 1 wherein the buffer gas comprises at least a third material configured to react with at least one of the first and second materials to form at least one inert, stable material.
- 5. (Original) The method of claim 1 wherein the buffer gas comprises at least one inert gas.
 - 6. (Original) The method of claim 5 wherein the at least one inert gas comprises

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at least one of helium and argon.

- 7. (Original) The method of claim 1 wherein the reactive gases comprise at least one of a dopant and an etchant that will react with the reactor wall to produce the second material.
- 8. (Original) The method of claim 7 wherein the reactive gases comprise the etchant and the etchant is hydrogen.
- 9. (Original) The method of claim 1 wherein the reactive gases include at least one of silane, silicon tetrachloride, and trimethylsilane, and at least one of methane and propane.
 - 10. (Original) The method of claim 1 further comprising heating the reactor wall.
- 11. (Original) The method of claim 10 wherein at least one of the reactor wall, the buffer gas, and the substrate seat is heated to control a temperature difference between a temperature of the reactive gases and a temperature of the substrate.
- 12. (Original) The method of claim 11 wherein the difference is maintained between about 5°C and about 200°C.
- 13. (Original) The method of claim 1 further comprising mixing all components of the reactive gases before flowing the reactive gases in the reactor chamber.
- 14. (Original) The method of claim 1 further comprising flowing components of the reactive gases separately into the reactor chamber to inhibit mixing of the components prior to introduction into the chamber.
- 15. (Original) The method of claim 1 further comprising expelling the buffer gas at least one of in a direction parallel to an axis of the reactor and through at least one opening defined in the reactor wall.

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16. (Original) The method of claim 1 wherein the reactive gases comprise one of the following groups of elements: silicon and carbon, aluminum and nitrogen, gallium and nitrogen, aluminum and gallium and nitrogen, and alloys of any of the preceding groups.

17. (Original) The method of claim 1 wherein the reactive gases include gases for growing crystals of at least one of SiC, a group III-V compound, and an alloy of SiC or a group III-V compound.

18 - 34. (Canceled).